

ABSTRACT

ROBUST AUTOFOCUS SYSTEM FOR A MICROSCOPE

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The present invention provides a method and apparatus for autofocusing of an optical instrument, especially a microscope (10). The autofocus scheme includes a digital gradient filter for generating a focus score from each captured image. Images may be captured at various positions and the focus scores analysed to determine a focus score maximum. The position corresponding to this maximum is then taken as the focus position.

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The spatial extent of the filter is preferably settable so that the digital filter settable selects elements of the image depending on their size in the image. Thus, the filtering process is controllable so that it is influenced by elements of the image whose size may be specified by the operator indirectly by way of the spatial extent of the filter. This allows the exclusion of small or large elements of the image from the autofocusing procedure which the filter should preferably ignore. The autofocus scheme is particularly useful for autofocusing biological specimens.

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Fig. 2